Scientific Areas of Integrated Review Groups (IRGs)

For a listing of the Scientific Review Officer and membership roster for each study section, click on the study section roster under the study section name within an IRG listed below or go to the study section index (study sections listed alphabetically) and click on the specified roster next to the name of the study section.

Vascular and Hematology IRG [VH]

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Atherosclerosis and Inflammation of the Cardiovascular System Study Section [AICS]

[AICS Membership Roster] [AICS Meeting Rosters]

The Atherosclerosis and Inflammation of the Cardiovascular System (AICS) Study Section reviews applications concerned with inflammation of the vascular system with a focus on atherosclerosis, a chronic inflammatory disease. Effects of major risk factors such as diabetes, aging, and smoking on the vasculature are of interest. This study section will review applications on the pathobiology of the blood vessels leading to atherogenesis, its reversal and prevention. A major contributor to atherogenesis is hyperlipidemia, involving transport and metabolism of cholesterol, lipoproteins and their oxidation derivatives. Specific areas covered by AICS:

- Immune mechanisms in vascular inflammation; cytokines, chemokines; lymphocyte-endothelial interactions; monocyte subsets; macrophages and T-cell activation and regulation.
- Lipoprotein oxidation and metabolism; structure and function of apolipoproteins, lipid-metabolizing enzymes and receptors; cholesterol transport and reverse transport; scavenger receptors and ABC transporters; apoproteins B, E and A-1; gene expression and regulation.
- Atherosclerosis progression and regression; HDL and atheroprotection; lipoprotein interactions with vascular cells and matrix components; foam cell formation; plaque stability and thrombosis; shear stress and cell signaling.
- Reactive oxygen species (ROS), reactive nitrogen species (RNS), eNOS and NO in vascular injury and endothelial dysfunction; effects of environmental toxins and nutritional components on vascular pathologies.
- Therapeutic strategies; cellular and and animal models for atherosclerosis, restenosis, hyperlipidemia, vascular inflammation, vascular injury,

diabetes, autoimmune myocarditis, abdominal aortic aneurysms and vascular calcification

Study sections with most closely related areas of similar science listed in rank order are:

Vascular Cell and Molecular Biology [VCMB]
Clinical and Integrative Cardiovascular Sciences [CICS]
Integrative Nutrition and Metabolic Processes [INMP]
Cellular Aspects of Diabetes and Obesity [CADO]

TOP

Erythrocyte and Leukocyte Biology Study Section [ELB]

[ELB Membership Roster] [ELB Meeting Rosters]

The Erythrocyte and Leukocyte Biology [ELB] study section reviews applications concerned with both basic and applied aspects of the blood system, Emphasis is on hemoglobinopathies, thalassemias; iron and heme metabolism; erythrocyte and granulocyte/monocyte biology, transfusion medicine, and disorders and parasitic infections that involve the formed blood elements. Specific areas covered by ELB:

- Hemoglobin structure, synthesis and biochemistry; blood substitutes; abnormal hemoglobins; developmental globin gene regulation; sickle cell anemia; and gene therapy for globin disorders.
- Iron and heme metabolism; iron overload states and strategies for the therapeutic intervention; and sideroblastic anemias.
- Immunohematology and transfusion: immunohematologic disorders; autoimmune hemolytic anemia, neutropenia; blood groups, blood banking, and transfusion medicine.
- Molecular cell biology, biochemistry, and structure of the formed blood elements: myeloid and erythroid cell membrane proteins and receptors; the interaction of myeloid and erythroid cells with the vascular wall; the granulocyte/monocyte and red cell cytoskeleton.
- Normal and pathological myelocyte and erythrocyte function.
- Inherited or acquired hemolytic anemias, including disorders involving the erythrocyte membrane or membrane skeleton and erythroblast biology.

Study sections with most closely related areas of similar science listed in rank order are:

Hematopoiesis study section [HP]
Hemostasis and Thrombosis study section [HT]
Cellular and Molecular Immunology Study Sections [CMIA]
Macromolecular Structure and Function A Study Section [MSFA]
Macromolecular Structure and Function B Study Section [MSFB]
Macromolecular Structure and Function C Study Section [MSFC]
Macromolecular Structure and Function D Study Section [MSFD]
Macromolecular Structure and Function E Study Section [MSFE]
Vascular Cell and Molecular Biology Study Section [VCMB]

TOP

Hypertension and Microcirculation Study Section [HM]

[HM Membership Roster] [HM Meeting Rosters]

The Hypertension and Microcirculation [HM] Study Section reviews applications involving basic and applied aspects of cardiovascular regulation with focus on the physiology of blood pressure regulation, the pathogenesis of hypertension and the microcirculation. It includes studies on cell surface receptors and signaling processes of various hormones, paracrine, and autocrine and their mechanisms of action as related to hypertension, neural-humoral control of circulation, regional hemodynamics, lymphatic circulation, and microcirculation. Specific areas covered by HM:

- Blood pressure regulation and systemic hypertension. Studies may focus on various regulators of blood pressure including the kidneys, central or peripheral nervous and endocrine systems, and autocrine and paracrine factors. Studies involving surgical, drug or hormonal interventions of hypertension, environmental influences on blood pressure or end organ effects of hypertension.
- Neural mechanisms of cardiovascular regulation. In particular, vertebrate animal studies of autonomic physiology involving all aspects of reflex arcs and central mechanisms including, physiology, pharmacology and receptor mechanisms.
- Molecular/cellular/biochemical/genetic studies of hypertension. Genetic linkage and association studies, candidate gene analyses, or epigenetics in humans and animal models of genetic hypertension. Generation of hypertension models by transgenic/knockout and gene expression analyses or gene transfer approaches in hypertension.
- Methodologies in the measurement and recording of blood pressure and regional measurements of blood flow including cerebral, splanchnic, skin, skeletal muscle, vasa vasorum, and renal vessels (excluding pulmonary circulation).
- Microcirculatory and lymphatic functions. Studies on rheology, capillary pressure and fluid exchange and nutrient delivery, arteriole/vein/venule and endothelial cell function, vascular permeability, autoregulation, response to metabolism, blood-brain barrier, propulsion of lymph and lymphatic tone, and pathophysiological processes contributing to primary and secondary lymphedema.
- Microcirculatory biophysics and bioengineering. Studies may focus on mechanotransduction of microvascular wall, fluid dynamics and mechanics in the microcirculation, computational modeling and engineering of microvascular function and structure, structural adaptation and remodeling of the vascular system in hypertension, e.g., increased peripheral resistance and microvascular rarefaction, and microvascular injury related to hypertension.

Study sections with most closely related areas of similar science listed in rank order are:

Vascular Cell and Molecular Biology [VCMB]
Clinical and Integrative Cardiovascular Sciences [CICS]
Pathobiology of Kidney Disease [PBKD]
Surgery, Anesthesiology, and Trauma [SAT]
Bioengineering, Technology, and Surgical Sciences [BTSS]

TOP

Hematopoiesis Study Section [HP]

[HP Membership Roster] [HP Meeting Rosters]

The Hematopoiesis [HP] Study Section reviews applications involving both basic and applied aspects of normal and abnormal hematopoiesis, including stem cell biology, hematopoietic growth factors and their receptors, leukemias and leukemogenesis, bone marrow failure syndromes, myeloproliferative syndromes, stem cell transplantation, and hematopoietic cell gene therapy. Specific areas covered by HP:

- Hematopoiesis and Growth Factors: Hematopoietic progenitors; Hematopoietic microenvironment/stromal cells; Transcriptional control of Hematopoiesis; Signal transduction in relation to hematopoiesis.
  Stem cell biology: Hematopoietic stem and progenitor cells; Embryonic stem cells as models of hematopoiesis; epigenetic regulation of stem cell gene transcription; Genetic modification of hematopoietic stem cells; Ex vivo expansion of hematopoietic stem cells.
- Myelopoiesis: Differentiation of myeloid cells: Granulocyte biology, function, and physiology; Monocyte/macrophage biology, function, and physiology; Molecular biology of myeloid receptors & proteins; Oxidant stress; Apoptosis; Leukemia (AML or CML); Myelodysplasia; Myeloproliferative disorders.
- Lymphocytes: Lymphocyte function; Differentiation of B lymphocytes; Differentiation of T lymphocytes; Lymphocytic leukemias (ALL, CLL, MLL) and lymphomas
- Thrombopoiesis; Thrombopoietin; Megakaryocytopoiesis; Megakaryocyte differentiation; Hemangioblasts
- Erythropoiesis: Differentiation of erythroid progenitors and precursors; Stress erythropoiesis; Erythropoietin; Erythroleukemia; Sickle cell disease; Thalassemia
- Bone marrow transplantation; Stem cell transplantation; Homing; Migration; Adhesion; Xenografts; Xenotransplantation; Gene therapy
- Bone marrow failure; Bone marrow failure syndromes, e.g., Fanconi Anemia (FA), Diamond Blackfan Anemia (DBA), Shwachman Diamond Syndrome
- Oncogenes; Oncogene expression; Tumorigenesis; Hematologic malignancies

Study sections with most closely related areas of similar science listed in rank order are:

Erythrocyte and Leukocyte Biology [ELB]
Hemostasis and Thrombosis [HT]
Innate Immunity and Inflammation [III]
Cancer Genetics [CG]

TOP

Hemostasis and Thrombosis Study Section [HT]

[HT Membership Roster] [HT Meeting Rosters]

The Hemostasis and Thrombosis [HT] Study Section reviews applications involving basic and applied aspects of the blood and vascular elements associated with hemostasis, thrombosis, and interactions with vasculature. Studies using cellular, biochemical, biophysical, immunological, genetic, pharmacological and molecular biological approaches to define normal and pathological processes are reviewed. Specific areas covered by HT study section:

- Mechanisms of hemostasis: blood coagulation, structure/function of coagulation proteins, congenital and acquired bleeding disorders; gene therapy for treatment of hemostatic disorders.
- Mechanisms of thrombolysis/fibrinolysis: fibrin structure; regulatory mediators including activators and inhibitors.
- Platelet biology: adhesion, aggregation, secretion; signal transduction mechanisms; platelet turnover; megakaryocyte biology; integrin receptor biology; platelet interactions with endothelial cells and leukocytes, congenital platelet disorders.
- Thrombosis: venous and arterial; rheology; inflammatory cytokines; mechanisms of atherothrombosis; tissue factor expression; congenital risk factors, diagnosis and pharmacologic intervention.
- Vascular biology: vessel wall interactions with the formed blood elements, including pro- and anti-coagulant functions, expression of tissue factor, matrix proteases, and soluble angiogenic factors from blood.

Study Sections with most closely related areas of similar science listed in rank order are:

Erythrocyte and Leukocyte Biology [ELB]
Macromolecular Structure and Function A Study Section [MSFA]
Macromolecular Structure and Function B Study Section [MSFB]
Macromolecular Structure and Function C Study Section [MSFC]
Macromolecular Structure and Function D Study Section [MSFD]
Macromolecular Structure and Function E Study Section [MSFE]
Atherosclerosis and Inflammation of the Cardiovascular System [AICS]
Vascular, Cell and Molecular Biology [VCMB]
The Hematopoiesis [HP]

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Vascular Cell and Molecular Biology Study Section [VCMB]

[VCMB Membership Roster] [VCMB Meeting Rosters]

The Vascular Cell and Molecular Biology [VCMB] Study Section reviews applications involving the cell and molecular biology of blood vessels ranging from major arteries to the microcirculation. Studies using cellular, biochemical, biophysical, immunological, genetic, pharmacological, and molecular biological approaches to define vascular homeostasis and dysfunction are reviewed. A principal focus is on the biology of the endothelium, vascular smooth muscle cell, as well as adventitial cells and pericytes.

- Vascular cell growth control; apoptosis, signaling pathways, intercellular communication.
- Transcription and posttranscriptional related to vascular biology.
- Vasomotor activity, including vasocontraction and relaxation, leukocyte trafficking, adhesion molecules; chemokines, cytokines; intercellular signaling; reactive oxygen and nitrogen species; Endothelial barrier function; extracellular matrix-mediated signaling.

- Injury/repair and associated angiogenesis and postnatal angiogenesis; remodeling; angioplasty; restenosis; grafts; stents; re-endothelialization; stem cells.
- Mechanotransduction at the cellular level: hemodynamic forces; stress/strain; force transmission coupling in cells; mechanosignaling.
- Protein biochemistry and structure biology of the vascular cells; proteomics; cellular dynamics through 3-D imaging; cytoskeleton; vesicular traffic.
- Vascular contribution and response to coagulation: thrombosis and fibrinolysis mechanisms mediated by the vascular cells; platelet-endothelial interactions.

Study sections with most closely related areas of similar science listed in rank order are:

Hypertension and Microcirculation Study Section [HM]
Atherosclerosis and Inflammation of the Cardiovascular System [AICS]
Cardiovascular Differentiation and Development [CDD]
Electrical Signaling, Ion Transport, and Arrhythmias [ESTA]

TOP

Vascular Biology Special Emphasis Panel

[Roster]

The Vascular Biology Special Emphasis Panel (ZRG1 CVS-Q 90) reviews non R01 codes that would otherwise be reviewed by either the Vascular Cell and Molecular Biology (VCMB) or Atherosclerosis and Inflammation of the Cardiovascular System (AICS) Study Sections. Accordingly, it reviews R21, R03 and R15 applications involving the cell and molecular biology of blood vessels from major arteries to the microcirculation as well as those related to inflammation of the vascular system including atherosclerosis, diabetes, transplantation, aging, lipoproteins, autoimmunity and infection. More detail may be found in the descriptions of the VCMB and AICS Study Sections. Specific areas covered by ZRG1 CVS-Q 90 SEP:

- Vascular homeostasis and remodeling: signaling; cell growth and differentiation; apoptosis; extracellular matrix and metalloproteinases; receptor biology; intercellular communication; reactive oxygen species; Injury/repair and associated angiogenesis; angioplasty; restenosis; grafts; stents; re-endothelialization; stem cells, gene therapy.
- Atherosclerosis and inflammation: immune mechanisms in vascular inflammation: cytokines, chemokines, macrophages and T cell activation and transplantation immunology related to cardiovascular disease; infective and toxicological; animal models, diabetes, vasculitis, regression of atherosclerosis; plaque stabilization.
- Transcriptional and posttranscriptional regulation as related to vascular biology; genomics, microarrays, bioinformatics, protein biochemistry of the vascular cell; proteomics.
- Endothelial barrier function and platelet endothelial interactions; mechanotransduction; hemodynamic forces; stress/strain.
- Lipoprotein metabolism and transport; lipoprotein interaction with vascular cells; metabolic syndrome; obesity; HDL; LDL modifications, oxidation; vascular lipoprotein receptors; novel interventional therapies for hyperlipidemia and triglyceride-rich lipoprotein metabolism, inflammation and cholesterol disposal; lipid metabolic disorders (genetic or acquired).

ZRG1 CVS-Q 90 with most closely related areas of similar science listed in rank order are:

Vascular, Cell and Molecular Biology [VCMB]
Atherosclerosis and Inflammation of the Cardiovascular System [AICS]
Hemostasis and Thrombosis [HT]
Hypertension and Microcirculation [HM]
Cardiovascular Differentiation and Development [CDD]

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